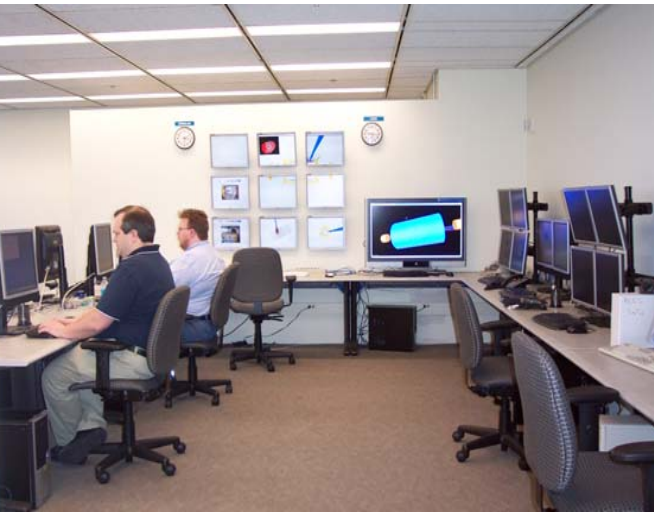
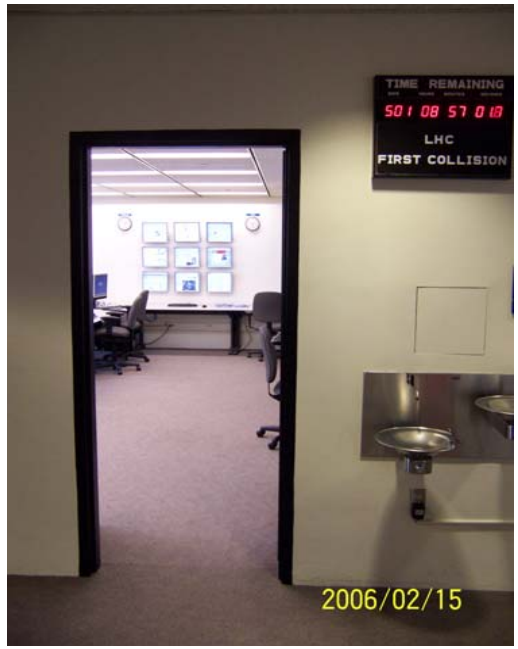
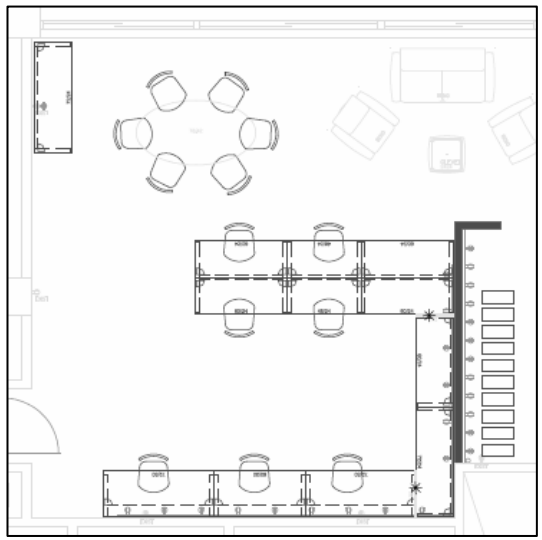
ROC At Work




TIME REMAINING
LHC
FIRST COLLISION
2006/02/15

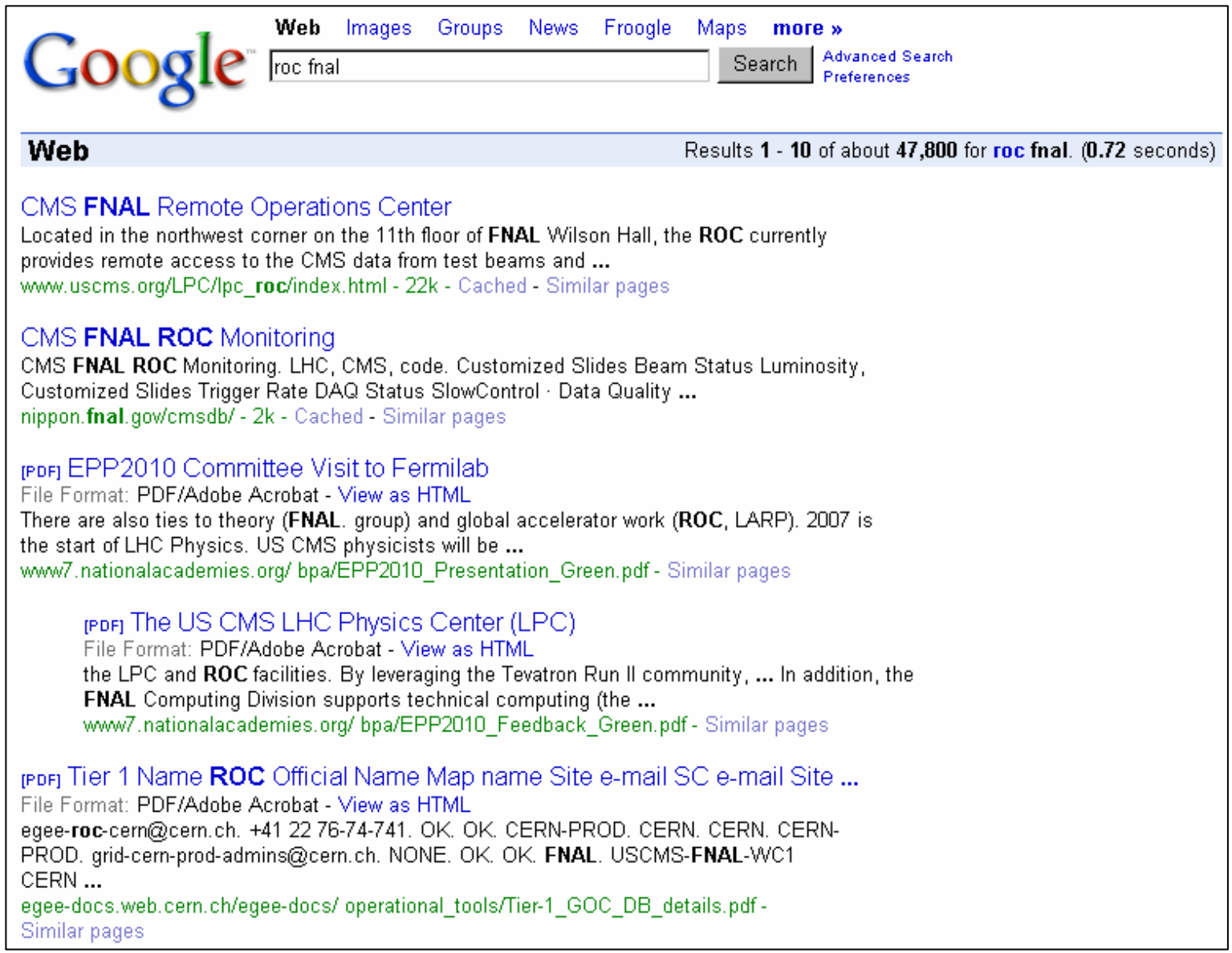

2006/05/12


2006/04/24




2006/06/05

ROC FNAL



Google

Web Images Groups News Froogle Maps more »

roc fnal Search Advanced Search Preferences

Web Results **1** - **10** of about **47,800** for **roc fnal**. (**0.72** seconds)

CMS **FNAL** Remote Operations Center
Located in the northwest corner on the 11th floor of **FNAL** Wilson Hall, the **ROC** currently provides remote access to the CMS data from test beams and **...**
www.uscms.org/LPC/lpc_**roc**/index.html - 22k - Cached - Similar pages

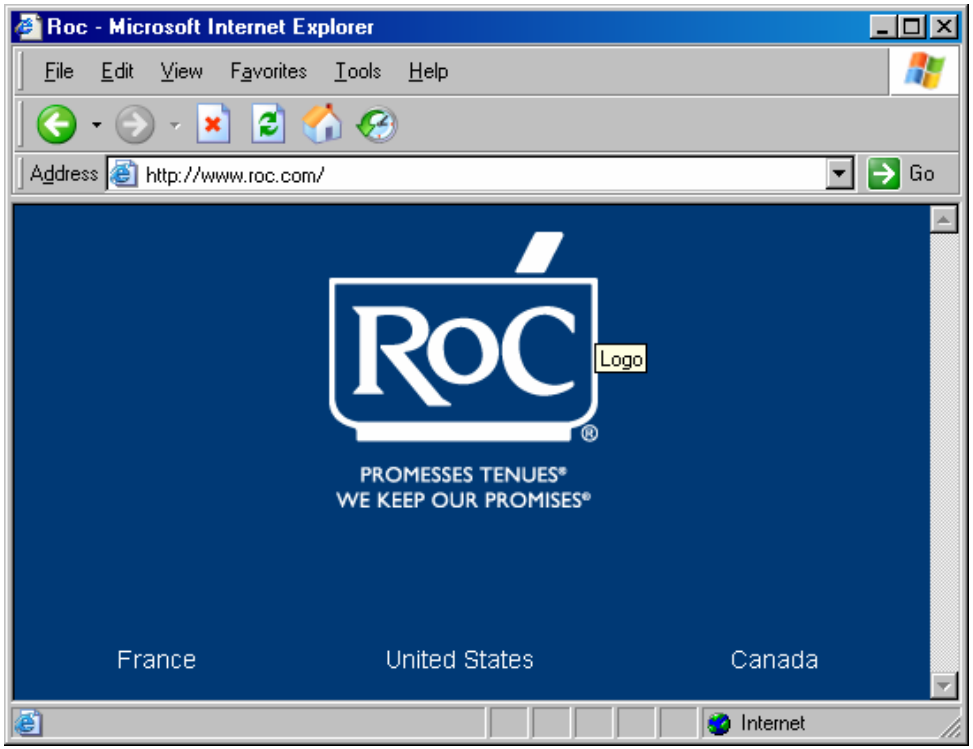
CMS **FNAL ROC** Monitoring
CMS **FNAL ROC** Monitoring. LHC, CMS, code. Customized Slides Beam Status Luminosity, Customized Slides Trigger Rate DAQ Status SlowControl · Data Quality **...**
nippon.**fnal**.gov/cmsdb/ - 2k - Cached - Similar pages

[PDF] EPP2010 Committee Visit to Fermilab
File Format: PDF/Adobe Acrobat - View as HTML
There are also ties to theory (**FNAL**. group) and global accelerator work (**ROC**, LARP). 2007 is the start of LHC Physics. US CMS physicists will be **...**
www7.nationalacademies.org/ bpa/EPP2010_Presentation_Green.pdf - Similar pages

[PDF] The US CMS LHC Physics Center (LPC)
File Format: PDF/Adobe Acrobat - View as HTML
the LPC and **ROC** facilities. By leveraging the Tevatron Run II community, **...** In addition, the **FNAL** Computing Division supports technical computing (the **...**
www7.nationalacademies.org/ bpa/EPP2010_Feedback_Green.pdf - Similar pages

[PDF] Tier 1 Name **ROC** Official Name Map name Site e-mail SC e-mail Site **...**
File Format: PDF/Adobe Acrobat - View as HTML
egee-**roc**-cern@cern.ch. +41 22 76-74-741. OK. OK. CERN-PROD. CERN. CERN. CERN-PROD. grid-cern-prod-admins@cern.ch. NONE. OK. OK. **FNAL**. USCMS-**FNAL**-WC1 CERN **...**
egee-docs.web.cern.ch/egee-docs/ operational_tools/Tier-1_GOC_DB_details.pdf - Similar pages

Since .com, .org, .net were taken…

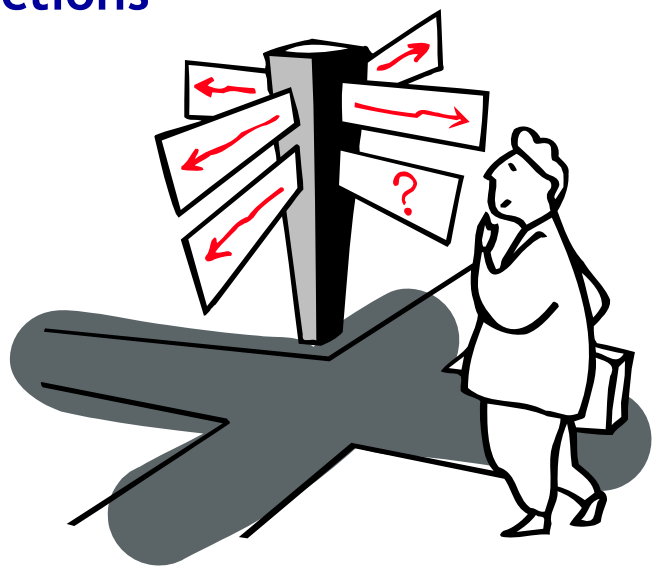


- roc.gov and roc.edu are free…

Remote Operations Center

http://www.uscms.org/LPC/lpc_roc/

- Logbooks
- Data Sets
- Data Quality Monitoring
- Web Based Monitoring
- Nodes & Disks
- New User Instructions
- LHC@FNAL
- Mailing Lists
- HyperNews
- Agenda Server
- CMS Workbook
- Glossaries
- Directories
- Photographs



- Page 1
- MTCC Schedule
- CMS Sub-Detectors
- Trigger
- Run Control
- Storage Manager
- Data Management
- Live Event Display
- WebCams
- Many more links…
  - LPC, CMS, MTCC, LHC, Fermilab

ROC Computing Infrastructure

CMS ROC Computing Infrastructure - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://www.uscms.org/LPC/lpc_roc/CMSROC-ComputingInfrastructure.html

CMS ROC Computing Infrastructure

Node Configuration | Accounts & Directories | Accessing Nodes, A

Configuration

The CMS ROC is equipped with 10 Linux PC's and 1 Linux file server. The configuration of these
table below.

Nodename	Configuration
cmsroc1	AMD Athlon(tm) 64 Processor 3500+, Dual PCI Express + SATA motherboard, 2048 MB, 80GB + 250GB, SLF305, 2x DVDRW, 3x Nvidia Quadro4 400 NVS quad analog display PCI cards
cmsroc2	AMD Athlon(tm) 64 Processor 3500+, Dual PCI Express + SATA motherboard, 1024 MB, 80GB + 250GB, SLF305, DVDR
cmsroc3	AMD Athlon(tm) 64 Processor 3500+, Dua 1024 MB, 80GB + 250GB, SLF305, DVDR
cmsroc4	AMD Athlon(tm) 64 Processor 3500+, Dua 1024 MB, 80GB + 250GB, SLF305, DVDR
cmsroc5	AMD Athlon(tm) 64 Processor 3500+, Dua 1024 MB, 80GB + 250GB, SLF305, DVDR
cmsroc6	AMD Athlon(tm) 64 Processor 3500+, Dua 1024 MB, 80GB + 250GB, SLF305, DVDR
cmsroc7	AMD Athlon(tm) 64 Processor 3500+, Dua 1024 MB, 80GB + 250GB, SLF305, DVDR
cmsroc8	AMD Athlon(tm) 64 Processor 3500+, Dua 1024 MB, 80GB + 250GB, SLF305, DVDR
cmsroc9	AMD Athlon(tm) 64 Processor 3500+, Dua 1024 MB, 80GB + 250GB, SLF305, DVDR
cmsroc10	AMD Athlon(tm) 64 Processor 3500+, Dua 1024 MB, 80GB + 250GB, SLF305, 2x DVI
cmsrocstor	2xDual Core AMD Opteron(tm) Processor 2 4096 MB, 80GB raid0 system drive, 3.3TB

- Anyone with a UAF account can log in at the terminal or remotely with their kerberos credentials.
- The group accounts are:
  - cmsroc
  - cmsroc_hcal
  - cmsroc_ecal
  - cmsroc_trk
  - cmsroc_muon
- The access to the group accounts is controlled by the ~/.k5login file in each account. Add the kerberos principal of those who can have access to the .k5login file. Patrick and Alan are there by default and can add people as needed.
- To connect remotely with the group account, type:

```
ssh cmsroc@cmsroc10.fnal.gov
```

- To change to the group account when you are logged in with your account, type:

```
ksu cmsroc
```

- To log in at the terminal with the group account, use the non-kerberos password.
- To ssh or scp to another node with the group account, you need first to type:

```
kinit "username"
```

- Anyone can write to `/scratch1` (70GB) and `/scratch2` (250GB) on each node.
- Only the group accounts can write to `/raid1` (3TB). Only the group accounts can log directly into the file server `cmsrocstor.fnal.gov`.

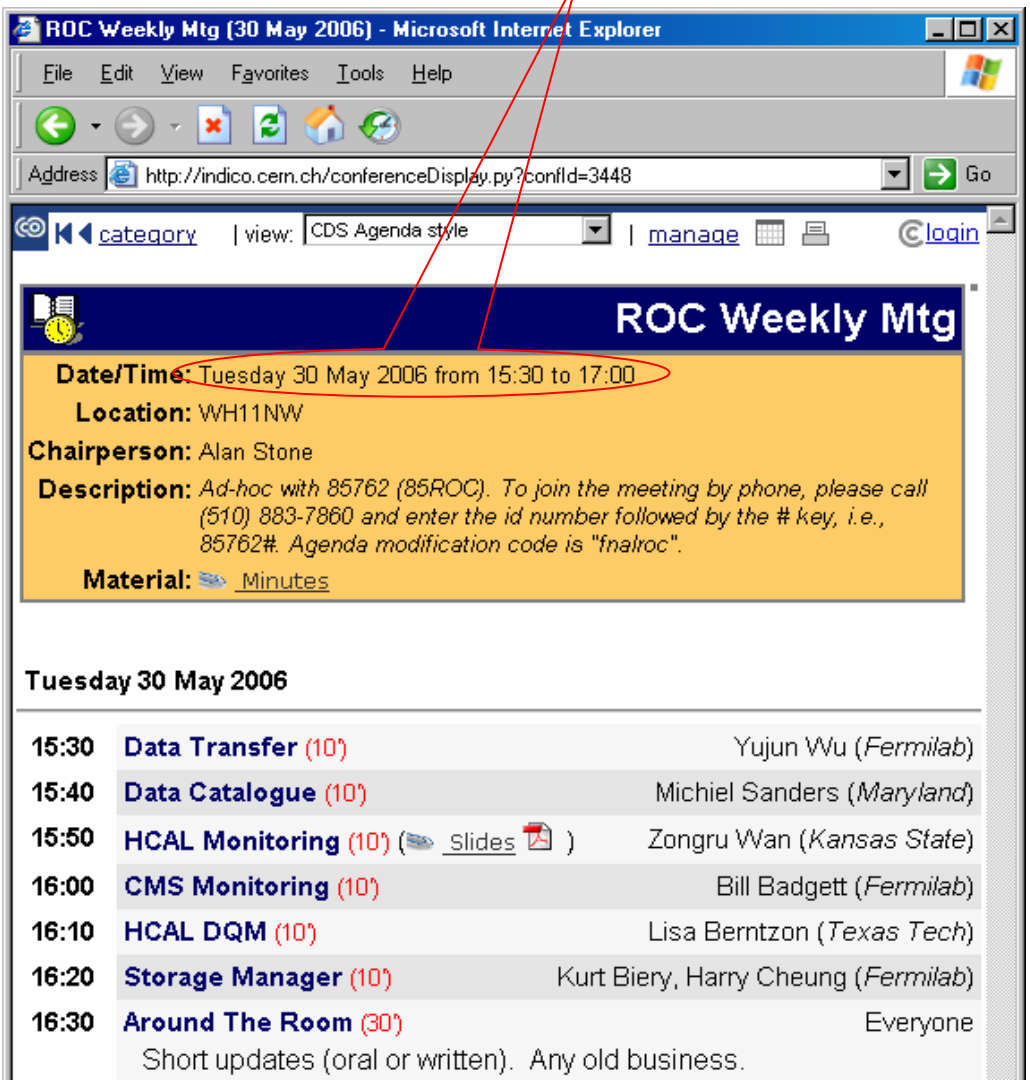
Courtesy of Patrick Gartung

Accounts and Directories

Each of these Linux PC's have local accounts for use in ROC operations. The account home directories are stored on /stage1 directory which has 70GB for all accounts. All accounts have access to the /raid1 directory which is a 3.3TB raid 5 array on the file server. Each PC has a 65GB /scratch1 directory and a 250GB /scratch2 directory for use by all accounts. Each account has been allocated 2GB in the /uscms/home directory and 10GB in the /uscms_data/d1 directories. The /scratch1 and /scratch2 partitions are not backed up. The /uscms/home directories are backed up nightly by the Tier 1 team. The /stage1 directory is copied to the raid5 array nightly for backup. The UAF accounts are also added to these PC's to allow local and remote login. The ROC accounts are listed in the table below.

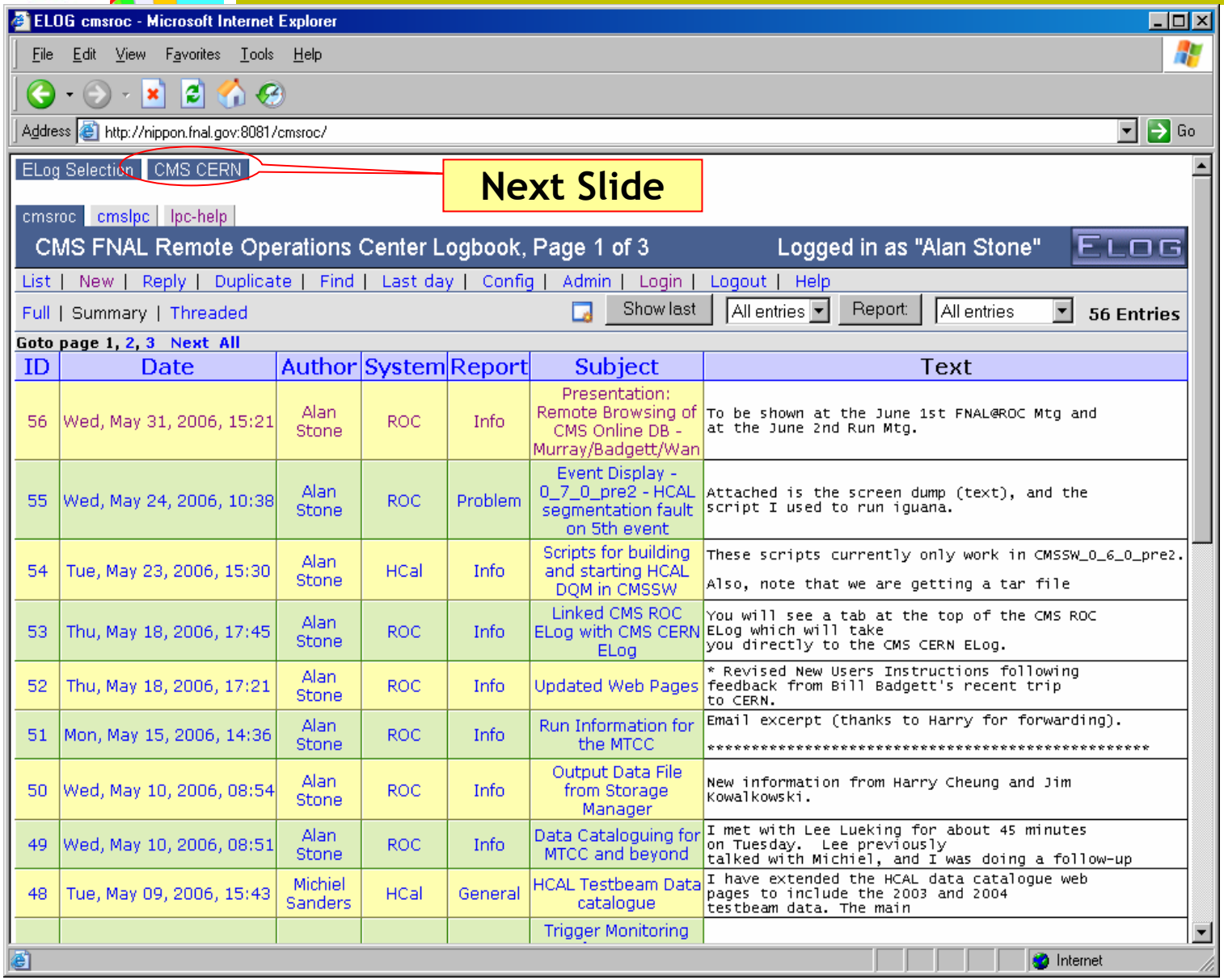
Account	UID	GID	Home Dir	Ibrix Home Dir *(backed up)*	Ibrix Data Dir	Purpose
cmsroc	13385	9783	/stage1/cmsroc	/uscms/home/cmsroc	/uscms_data/d1/cmsroc	ROC operations
cmsroc_muon	13386	9783	/stage1/cmsroc_muon	/uscms/home/cmsroc_muon	/uscms_data/d1/cmsroc_muon	Muon operations
cmsroc_hcal	13387	9783	/stage1/cmsroc_hcal	/uscms/home/cmsroc_hcal	/uscms_data/d1/cmsroc_hcal	HCal operations
cmsroc_trk	13388	9783	/stage1/cmsroc_trk	/uscms/home/cmsroc_trk	/uscms_data/d1/cmsroc_trk	Tracker operations
cmsroc_ecal	13389	9783	/stage1/cmsroc_ecal	/uscms/home/cmsroc_ecal	/uscms_data/d1/cmsroc_ecal	ECal operations

Weekly ROC Meetings



- Each Tuesday in the ROC from 15:30 to 17:00
  - Remote participants include Maryland, Kansas, KSU, Texas Tech, S. Alabama
  - 2-3 formal presentations plus around the room updates
- Added Sx5 HCAL I&C / ROC joint mtg on Tuesdays
  - Share and exercise the same monitoring tools
  - Get more direct feedback and instructions from CERN
  - ROC part begins ~ 9:30 FNAL
  - Currently by phone with content on agenda server

ROC ELog



ID	Date	Author	System	Report	Subject	Text
56	Wed, May 31, 2006, 15:21	Alan Stone	ROC	Info	Presentation: Remote Browsing of CMS Online DB - Murray/Badgett/Wan	To be shown at the June 1st FNAL@ROC Mtg and at the June 2nd Run Mtg.
55	Wed, May 24, 2006, 10:38	Alan Stone	ROC	Problem	Event Display - 0_7_0_pre2 - HCAL segmentation fault on 5th event	Attached is the screen dump (text), and the script I used to run iguana.
54	Tue, May 23, 2006, 15:30	Alan Stone	HCal	Info	Scripts for building and starting HCAL DQM in CMSSW	These scripts currently only work in CMSSW_0_6_0_pre2. Also, note that we are getting a tar file
53	Thu, May 18, 2006, 17:45	Alan Stone	ROC	Info	Linked CMS ROC ELog with CMS CERN ELog	You will see a tab at the top of the CMS ROC ELog which will take you directly to the CMS CERN ELog.
52	Thu, May 18, 2006, 17:21	Alan Stone	ROC	Info	Updated Web Pages	* Revised New Users Instructions following feedback from Bill Badgett's recent trip to CERN.
51	Mon, May 15, 2006, 14:36	Alan Stone	ROC	Info	Run Information for the MTCC	Email excerpt (thanks to Harry for forwarding). **********
50	Wed, May 10, 2006, 08:54	Alan Stone	ROC	Info	Output Data File from Storage Manager	New information from Harry Cheung and Jim Kowalkowski.
49	Wed, May 10, 2006, 08:51	Alan Stone	ROC	Info	Data Cataloguing for MTCC and beyond	I met with Lee Lueking for about 45 minutes on Tuesday. Lee previously talked with Michiel, and I was doing a follow-up
48	Tue, May 09, 2006, 15:43	Michiel Sanders	HCal	General	HCAL Testbeam Data catalogue	I have extended the HCAL data catalogue web pages to include the 2003 and 2004 testbeam data. The main
					Trigger Monitoring	

- Same Elog used at P5
- No password for read-only access
- Must register to make new entries or replies
- Runs on ROC web server
- Accepts all forms of attachments
- Can create sub-categories upon request

CMS DAQ ELog

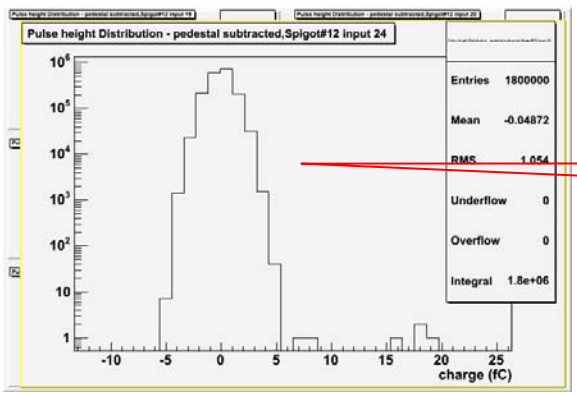
e-log Server@cmsdaqpreseries

Please, visit the elog discussion forum to report problems or make suggestions

Logbook	Entries	Last submission
- General		
Shift	13	Mon May 29 21:04:57 2006 by Dragoslav Lazic, mailto:Dragoslav.Lazic@cern.ch
- Subsystems		
DAQ	63	Sun Jun 4 19:55:03 2006 by alexander oh, mailto:alexander.oh@cern.ch
HCAL	49	Mon Jun 5 12:38:34 2006 by Richard Kellogg, mailto:richard.kellogg@cern.ch
ECAL	4	Mon Jun 5 16:04:30 2006 by Ken Bell, mailto:Ken.Bell@cern.ch
Trigger	15	Fri Jun 2 13:18:44 2006 by Tim Christiansen, mailto:Tim.Christiansen@cern.ch
CSC	39	Fri Jun 2 13:05:08 2006 by Tim Christiansen, mailto:Tim.Christiansen@cern.ch
Tracker	1	Fri May 19 16:13:0
DT	0	
RPC	0	
Alignment	0	
- Test		
Test	63	

Requires AFS password to read entries

Register separately to make or reply to entries



ELOG HCAL - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address https://cmsdaq.cern.ch/elog/HCAL/

e-log Selection | General | Subsystems | Test

DAQ | HCAL | ECAL | Trigger | CSC | Tracker | DT | RPC | Alignment

HCAL, Page 1 of 3 Not logged in

Find | Login | Help

Full | Summary | Threaded Show last All entries Type: All entries 49 Entries

Goto page 1, 2, 3 Next All

ID	Date	Author	Type	Subject	Text
49	Mon Jun 5 12:38:34 2006	Richard Kellogg, richard.kellogg@cern.ch		QIEReset test	Serguei has uncommented the line in HE_Initalization_mode_77h_v5.sl (put 63 12) which enables the QIEReset in the CCM.
48	Thu Jun 1 12:40:02 2006	pawel de barbaro, pawel.de.barbaro@cern.ch		r344, 2time-slice sum distributions	pawel/numan we have looked at 2bx distributions for run 344.
47	Wed May 31 22:32:04 2006	pawel de barbaro, pawel.de.barbaro@cern.ch		run344, 100k muons into HE	pawel/numan. we have taken 100k muon run into HE+ sector14,
46	Wed May 31 18:51:15 2006	numan bakirci, numan.bakirci@cern.ch		run 344	run 344 stopped at 100018 events.
45	Wed May 31 14:57:57 2006	pawel de barbaro, pawel.de.barbaro@cern.ch			pawel/numan
44	Wed May 31 10:30:06 2006	pawel de barbaro, pawel.de.barbaro@cern.ch		data taken on may 31	pawel/vitali/numan start runcontrol on moe3

MTCC Data

- Events
  - Detector & Trigger Readout
  - DQM Histograms
  - Event Displays & Consumers
  - Run Control
  - Storage Manager
  - Runs, File partitions

See Michiel Sander's presentation on data sets, transfers and access at FNAL

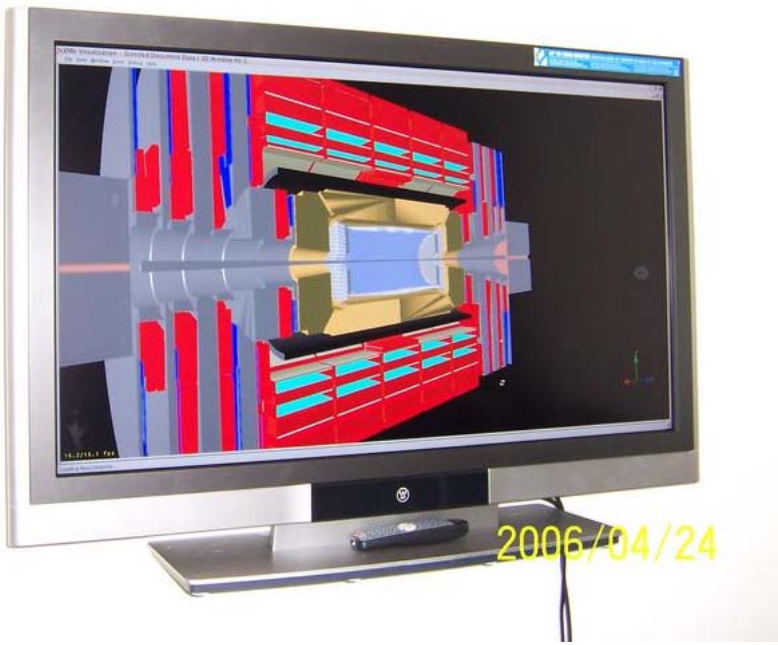
- Slow Controls
  - Sub-detector Electronics Readout
  - Safety Systems
  - Databases

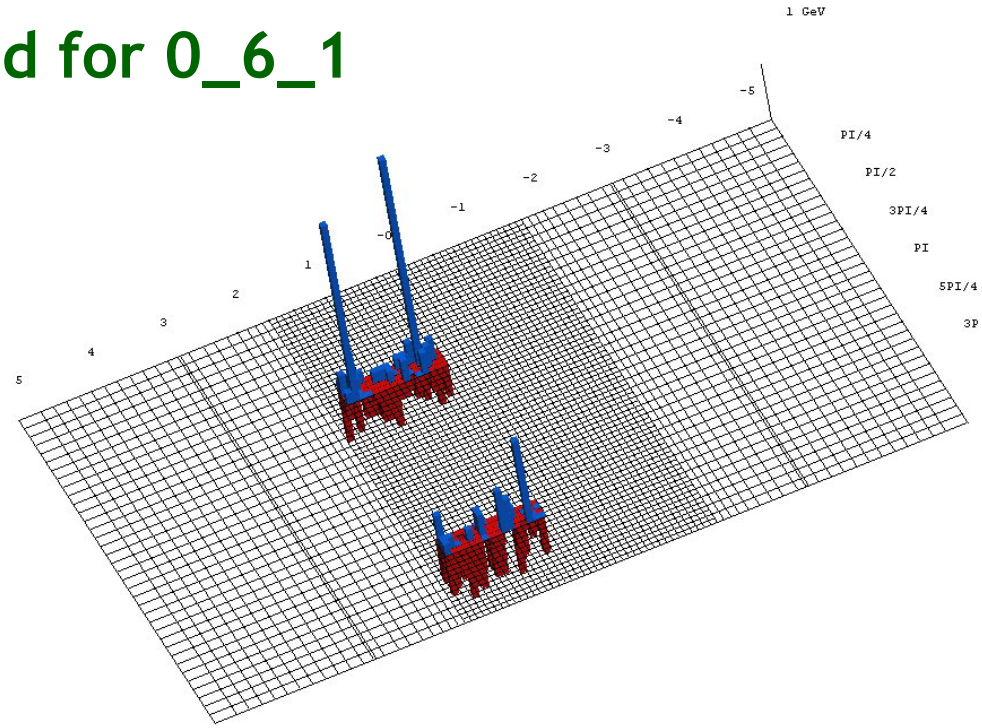
- All MTCC data shipped to FNAL
  - 1 to 24 hours from T0
  - Need to minimize latency
- DQM Histograms
  - Root files with all histos
  - Effort to provide consumers a dedicated stream of live events <1 minute
- Database Access
  - Web based monitoring tools being developed by Zongru Wan, Bill Badgett and Steve Murray

https://twiki.cern.ch/twiki/bin/view/CMS/CMSComputingForMTCC

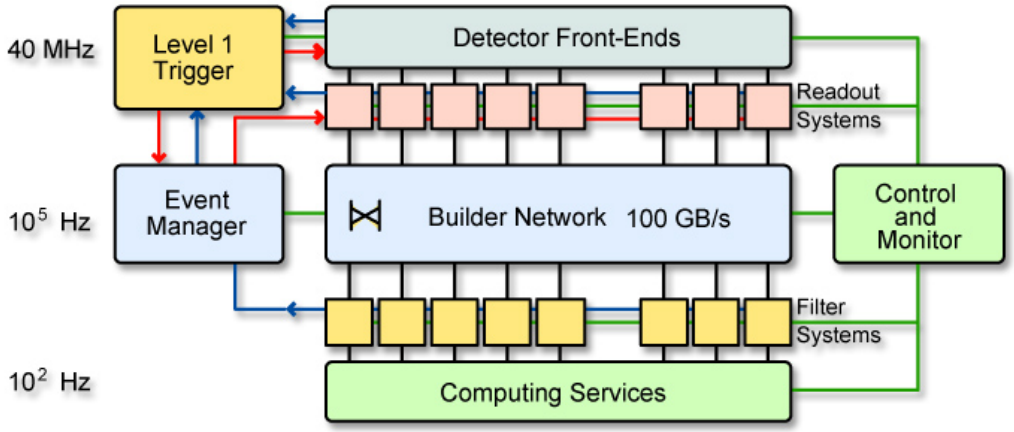
Event Display

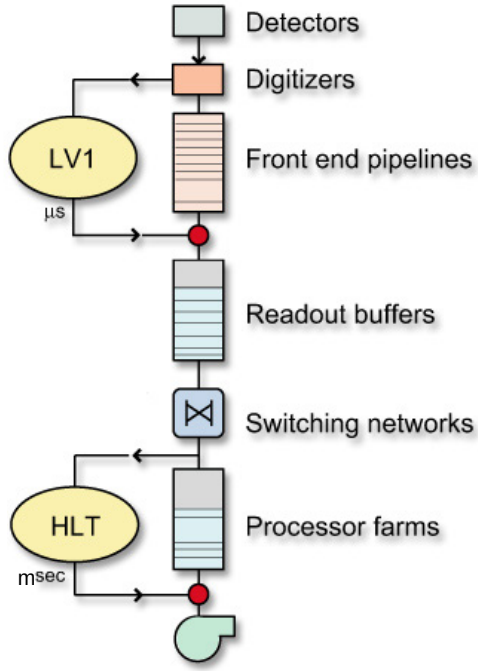
- Simple scripts to run IGUANA on local files
  - Working in CMSSW 0_5_1 on HCAL and EMU raw data
- Would like to exercise with interesting MC since real data will be limited to cosmics for the next year
- CMSSW 0_6_0 has a number of features resulting in crashes
  - Expected to be resolved for 0_6_1

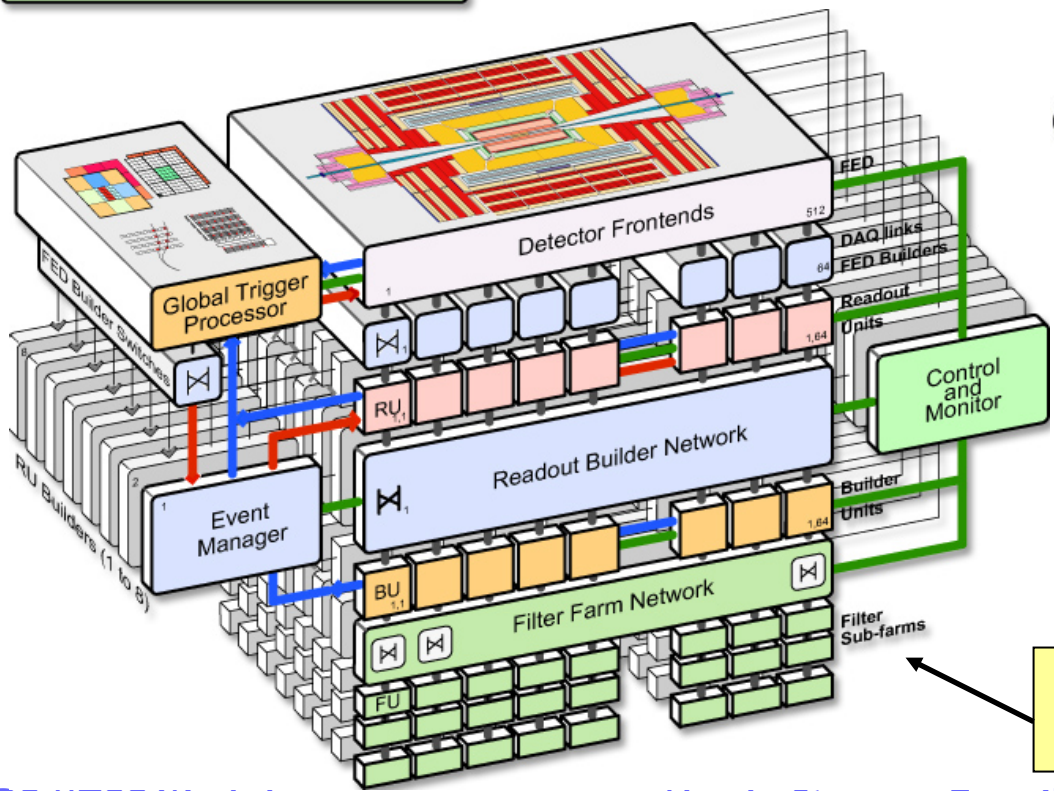




DAQ Schematic



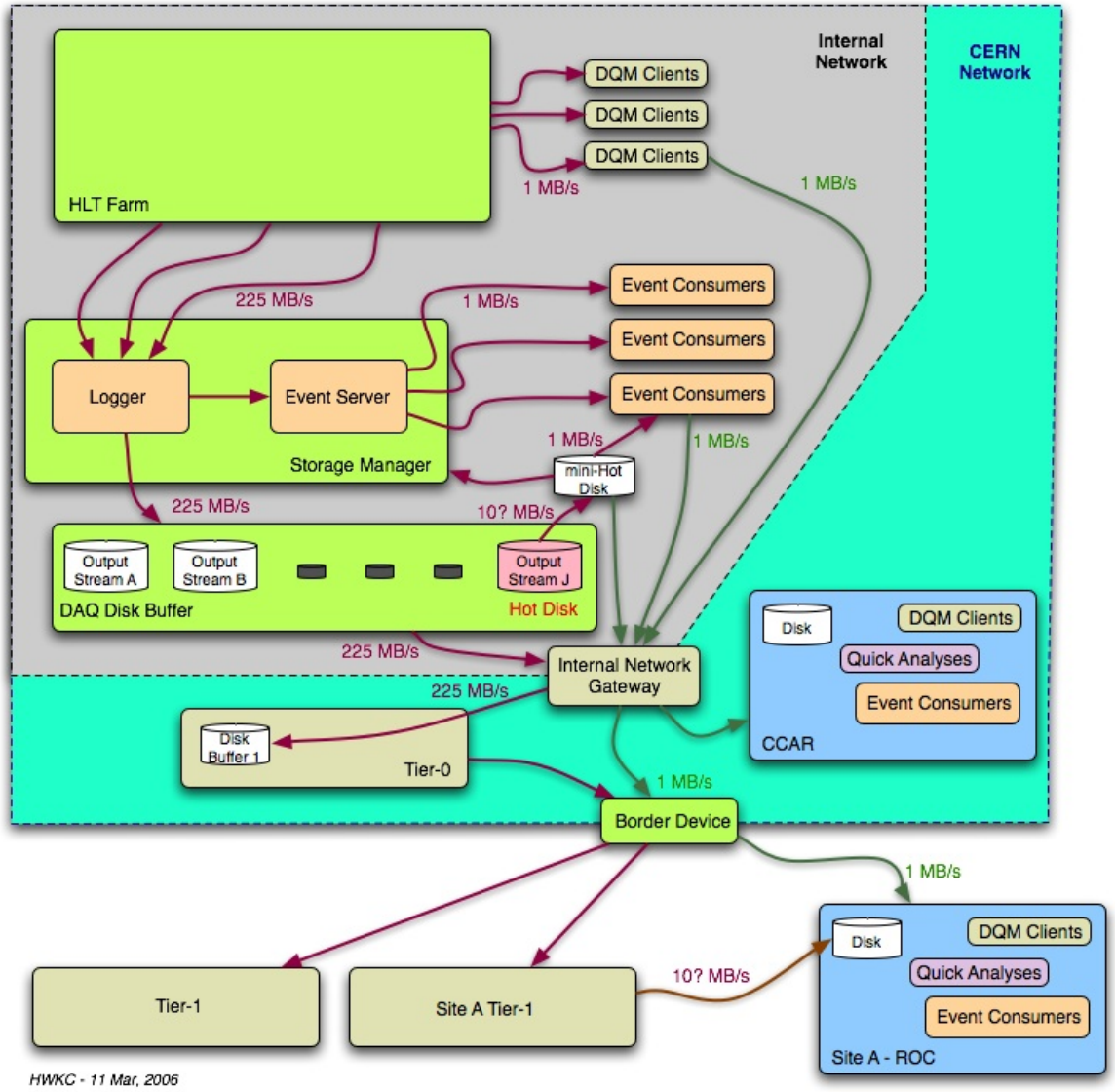




Courtesy of Harry Cheung

Storage Manager part of Filter Sub-farm

Storage Manager

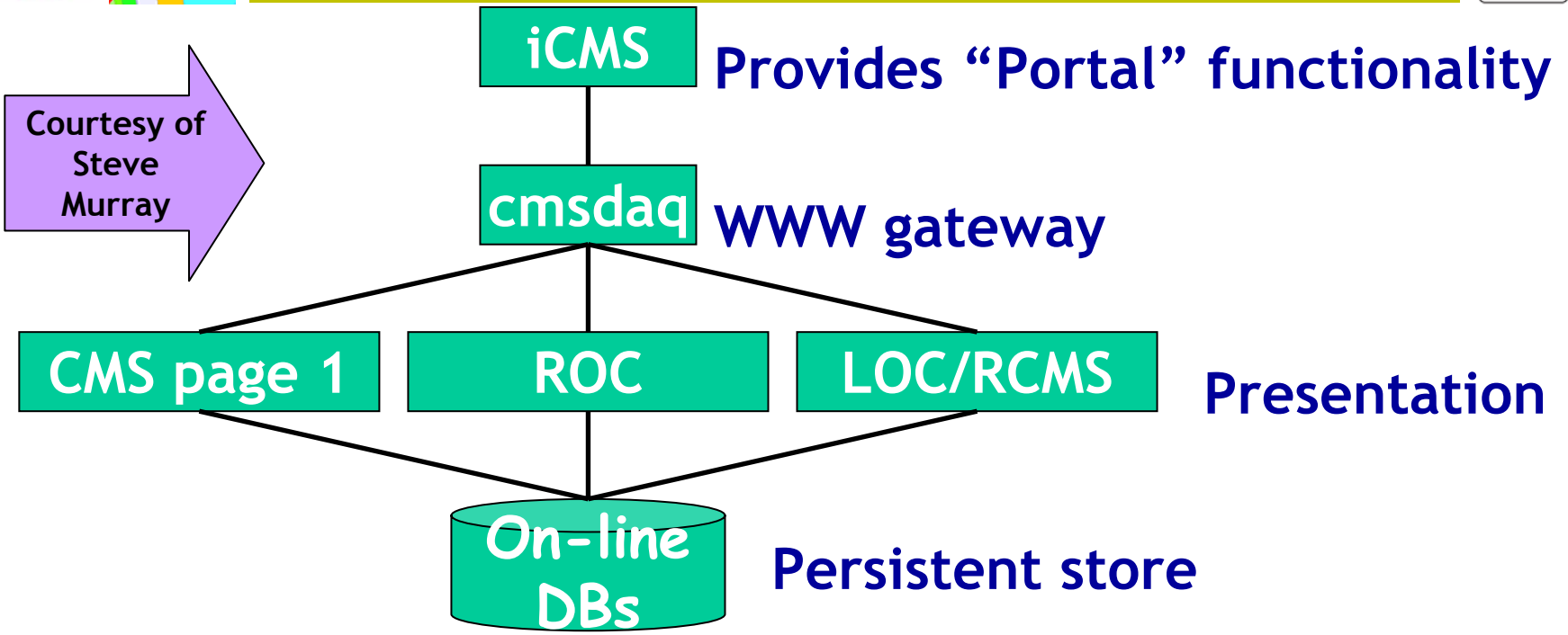


- Storage Manager provides a data logging function and an event server function
- Interaction of the SM with ROC is via the Event Server, through event consumers running at the ROC
- Kurt Biery is working on the aspects of the Event Server relevent to the ROC
- SM prototype written by Jim Kowalkowski & Harry Cheung in CMSSW_0_6_0_pre5 contains an Event Server that can be used during the magnet test/cosmic challenge
- Kurt Biery is working on the event headers so more specific events can be directed to the ROC

Web Based Monitoring

- Browser
  - Reads the contents of the online databases (DB)
  - Example: ROC shifter
- Publisher
  - Creates user-defined content driven by the online DB
  - Example: Sub-detector developer
- Easy, remote access to all CMS experimental summary variables
  - Environmental, trigger, run, luminosity, DQM, Safety
  - Data to files: text, root, xml, etc.
- Quantity vs. time plotting
  - Anything vs. anything
  - Correlations between asynchronous quantities within the same time window Δt
- Light weight, non-intrusive protocol
  - http natural option
- Recipe required to publish user-defined content including
  - Single data values from DB:
    - Example: current temp
  - Plots of data values from DB:
    - Example: temperature readings taken over the last month
- All content should be provided by Java application server software based on previous work done at Fermilab

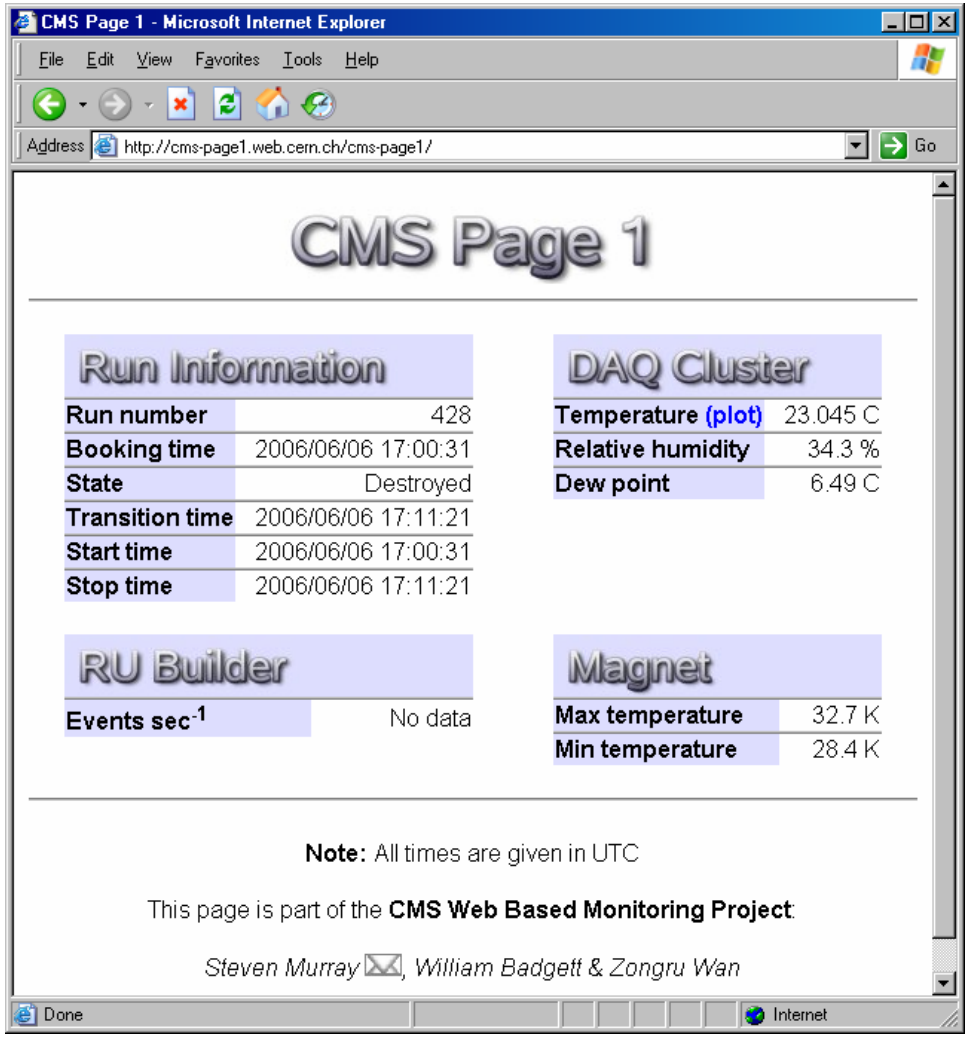
Architecture



- 100's of thousands of variables
  - …but so very few filled in the database
  - Web display tricky
- Prototype of CMS page 1 http://cms-page1.web.cern.ch/cms-page1/
- Prototype of general browser http://cmsdaq.cern.ch/cmsmon/
  - Left hand side: browsing tree, generated asynchronously, rarely
  - Right hand side: selection display, generated dynamically

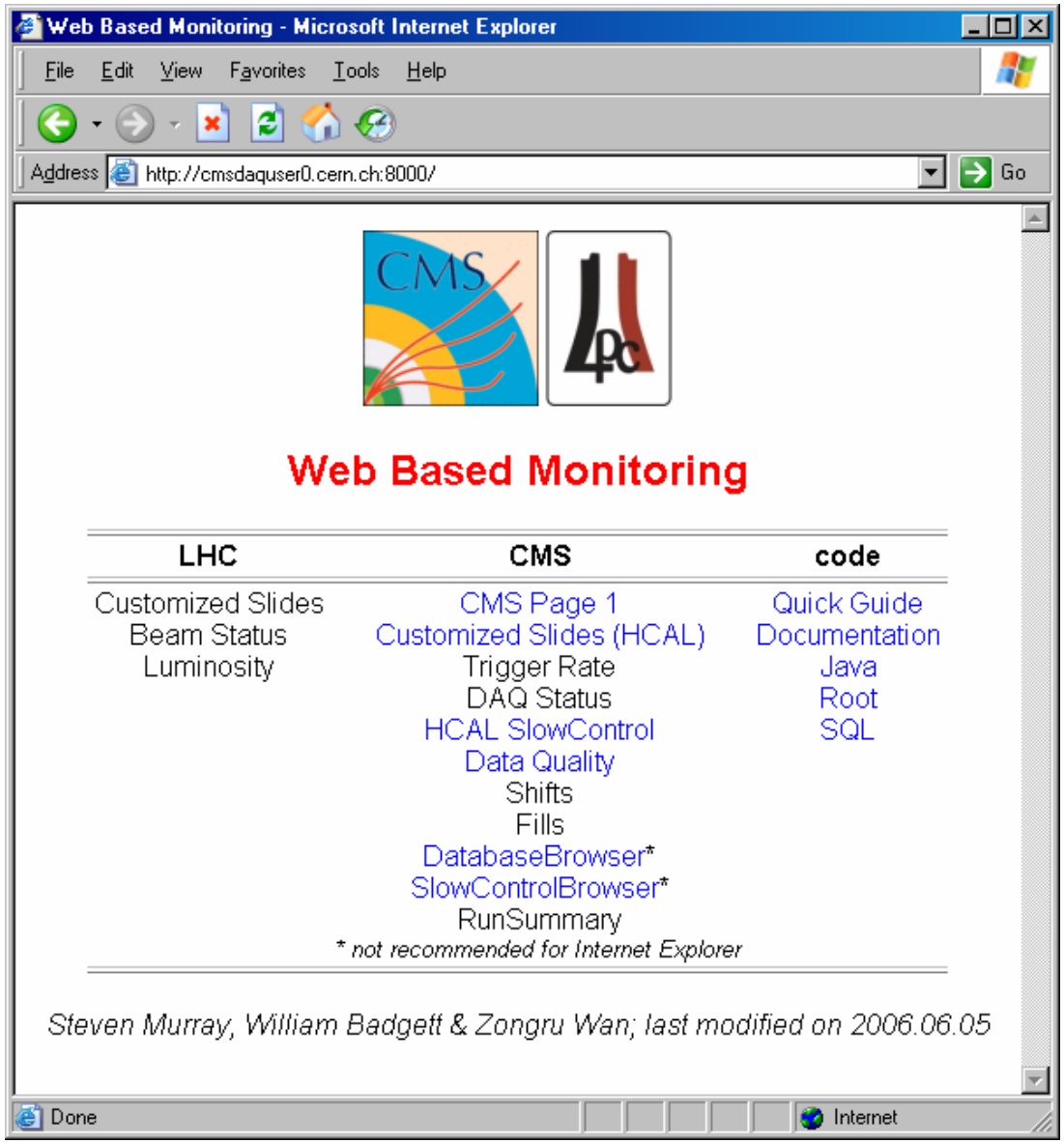
CMS Page 1

- Run
  - e.g. current run number and state
- Sources
  - e.g. which sub-detectors are in and their state
- Trigger
  - e.g. efficiency
- Event builders
  - e.g. events per sec
- Filter farm
  - e.g. number of events written to disk
- DCS
  - e.g. cluster temperature



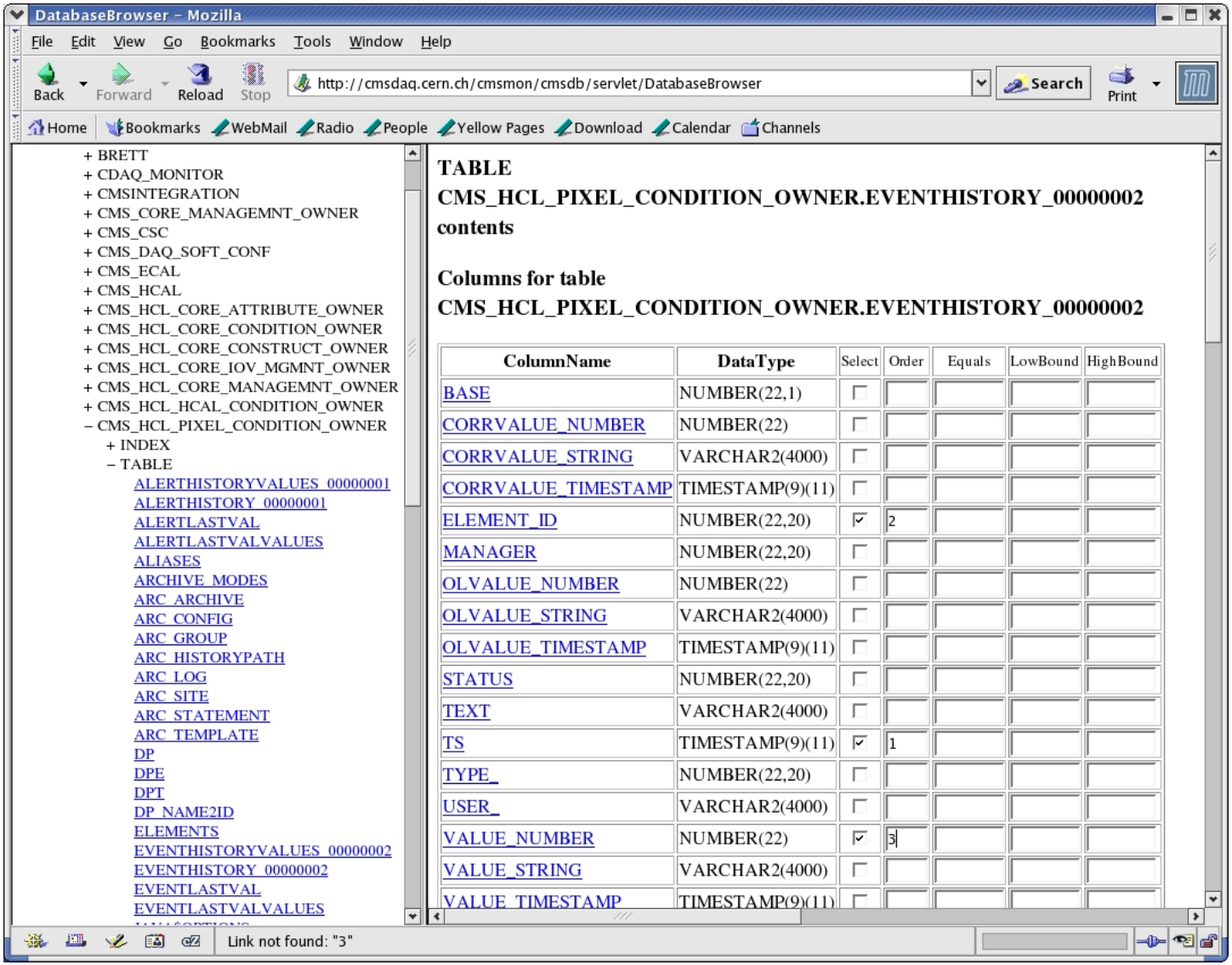
Intended to be simple and stable. Should give an overview of the current state of the DAQ.

WBM



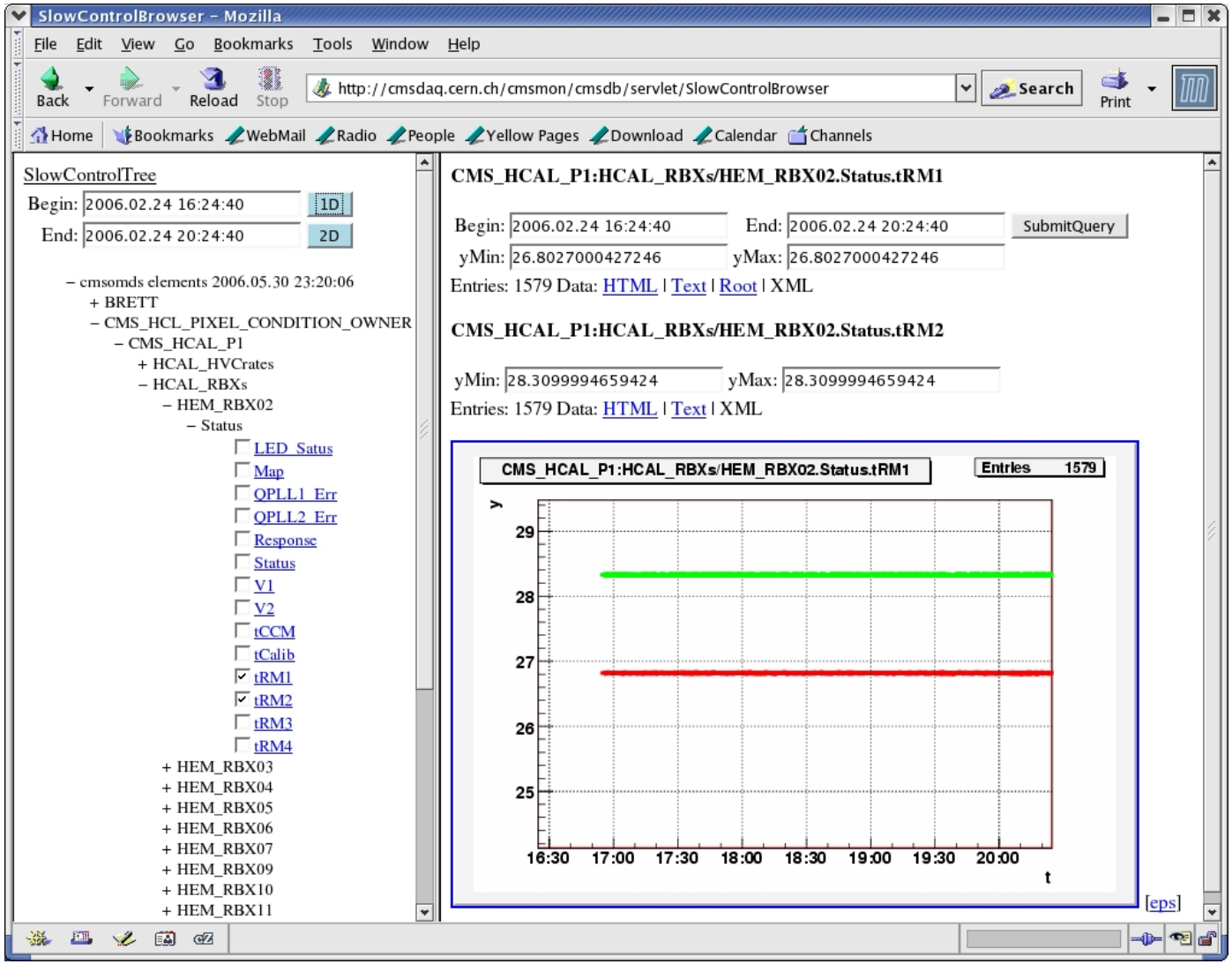
- General CMS Portal to all sorts of information
  - Event or Database Data
  - Automatic plots and tables about runs and detectors (for shifters)
  - Interactive tools for experts
- Currently Available
  - Database Browser
  - Slow Control Browser
  - HCAL Specific Monitoring

Database Browser



Intended to help design queries and learn what database contains, but not for general naïve use.

Slow Control Browser



- Recognizes and presents database schemas that implement the standard DCS tables
- For detector experts and operational use…can provide basis for popular plots
- Only 1D plots implemented for now

WBM: To-Do List

- Continue implementation of general browsers
  - Define db ↔ root format
  - Deal with non standard schemas
- Deal with change of database
- Provide modular infrastructure for other detectors based on HCal servlets
  - Eye towards shift crew use
- Encourage data entry
- How will other important info be stored?
  - Trigger, luminosity, backgrounds
  - Will they use standard DCS schema?
- CMS page 1 should be migrated from Microsoft IIS to Java application server